OPEN MEETING AGENDA ITEM

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AZ CORP COMMISSION
DOCKET CONTROL

EXCEPTION

July 21, 2009

Arizona Corporation Commission
DOCKETED

JUL 23 2009

DOCKETED BY

Arizona Corporation Commission
Docket Control
1200 West Washington St.
Phoenix, AZ 85007

Re: ACC Docket No. E-01575A-08-0328

Subject: Exceptions to the Recommended Opinion and Order (ROO) for the SSVEC rate case,

This exception to the ROO pertains to pages 35 to 39. This reflects what was presented to the Judge at the hearings in Tucson several months ago. Since that time, much progress has been made towards making the Sonoita, Elgin and Patagonia communities a model of how to resolve electricity issues for those "at the end of the line".

The following are two requested changes to the ROO:

1. In the Finding of Fact, page 39 lines 3 and 4:

Replace the following sentence:

"It is not in the public interest, however, to order SSVEC to delay the planned upgrade."

With:

The Sonoita/Elgin community-proposed alternatives have presented new information in the docket for reliability and capacity. These alternatives have significant cost savings with improved environmental impacts when compared to a company-proposed 69kV subtransmission line and substation for the SSVEC Member Cooperators has presented new information in the docket. Though this rate increase does not include this proposed 69kV line, the Commission does have interest in the fiscal decisions of the Cooperative.

It appears the community-proposed upgrades to the existing feeder line and substation could provide at least 10 years of reliable power to this area, at which time new innovations in Renewable Energy and storage will be available for these Communities to attain their goal of Sustainable Locally Generated Renewable Electricity. Therefore, it would be in the public interest for SSVEC to conduct further research before moving forward with the 69kV Project.

2. In the Recommended Order, page 47

Add

"IT IS FURTHER ORDERED THAT SSVEC shall initiate a detailed Feasibility Study by an independent organization that the Staff can agree is acceptable, to review and perform a detailed analysis including trade-off studies, to asses various utility and privately-funded ways to resolve the continuity and capacity issues for the Sonoita, Elgin and Patagonia communities with distributed renewable energy solutions. The company may choose to apply for grants and stimulus funds to offset appropriate costs. A copy of this study shall be filed in this docket and with the Director of the Utilities Division not later than 1 December 2009."

Discussion.

Though SSVEC testified to listening and working with the Sonoita communities, SSVEC staff met for the first time to "listen to us" on July 13, 2009. Minutes of these discussions are enclosed.
The public comments from the Sierra Vista Hearings indicated that additional alternatives and options, especially ones involving local renewable energy generation in the Sonoita/Elgin and Patagonia areas could save SSVEC ratepayers millions while benefiting the Co-op with renewable energy, including distributed generation, to meet the SSVEC Renewable Energy Standard and Tariff (REST) goals.

Summarized Points from Power Point Presentation:

Residential solar systems (both photovoltaic and hot water) and similar commercial systems will reduce the summer peak electrical demands and thus capacity on the existing 25 kV line to Sonoita. By reducing demand with alternative systems, energy efficiency measures (such as using compact fluorescent lights), tankless (non-electric) hot water heaters, changing from electric heat to gas home heaters, will reduce the winter "peaks" in the early morning and evenings.

Several large scale solar projects are in the early planning stages. At least two 1+ MW generation systems are also being planned to boost the local generation capacity (during all hours) so as to relieve the 7 MW capacity on the existing 25 kV line. These small generators alone are worth several years of growth in these communities.

Also, a tap on the existing TEP 46 kV line that crosses Sonoita, near Elgin Road, is a possibility for backup power during outages. An additional tap proposed south of Patagonia will permit the UNS Electric and SSVEC to tie their systems so that if either have an outage, then the one will be able to share some spare electricity for the other.

All of these projects must be analyzed to technically determine the feasibility of these projects and their electrical, environmental and economic impacts. We have recommended a Feasibility Study be conducted using information only known by SSVEC, be performed by an independent third-party, to ensure the "best" options have been objectively reviewed so that the best decisions are made for these communities.

Gail Getzwiller
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PO Box 815
Sonoita, AZ 85637
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July 21, 2009

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renewable energy projects.[137] To the extent residents in the area and the Cooperative believe it would be helpful, the Commission can make its Staff available to moderate discussions on how renewable generation can successfully be integrated into its system. It is not in the public interest, however, to order SSVEC to delay the planned upgrade. -delete + Add new para's.

* * * * * * * * * *

Having considered the entire record herein and being fully advised in the premises, the Commission finds, concludes, and orders that:

FINDINGS OF FACT

1. On June 30, 2008, SSVEC filed with the Commission an application for a rate increase.

2. On July 18, 2008, SSVEC filed Revisions to its Application.

3. On July 30, 2008, Staff notified the Cooperative that its application was sufficient under the requirements outlined in A.A.C. R14-2-103, and classified the Cooperative as a Class A utility.

4. By Procedural Order dated August 18, 2008, a procedural schedule was established and the matter was set for hearing to commence on April 21, 2009.

5. On November 12, 2008, SSVEC filed a Notice of Filing Affidavits of Mailing and Publication, indicating that Public Notice of the Hearing was mailed to its members/customers between September 26, 2008, and October 24, 2008, and was published in the *Sierra Vista Herald/Bisbee Daily Review* on October 16, 2008, and in the *Weekly Bulletin*, the *San Pedro Valley News-Sun*, and the *Arizona Range News* on October 15, 2008.

6. On January 6, 2009, Staff filed a Request for Extension of Time to File the Direct Testimony of Jerry Mendl concerning purchased power procurement. SSVEC did not object, and the schedule for filing testimony was revised by Procedural Order dated January 6, 2009.

7. In response to comments received from customers, the Commission determined that there was sufficient interest in the rate case and the potentially related matter of a new 69 kV

[137] Tr. at 89.

numerous complaints from residents and businesses in the area about the blackouts, and suggests that these interests have been patient for a long time while the Cooperative works on a solution.[134] SSVEC states that breaking the line into smaller feeders will help reliability because a problem on one portion of the line will not affect the entire area. [135]

The evidence indicates that the planned upgrade of the existing 360 mile three phase feeder to a 69 kV line, with a new substation and four smaller feeders, will address the capacity issues and improve system reliability in the Sonoita area. The upgrade will not prevent local efforts to install renewable generation sources, but would enable the generation to be utilized by providing a transmission path.

The Commission's Line Siting Committee does not have jurisdiction over the siting of the proposed 69 kV line,[136] and the Commission does not design utility infrastructure. However, the Commission does have authority to ensure that the Cooperative is providing safe and reliable service. The Cooperative is responsible for designing and operating a safe and reliable system for all of its members. The Cooperative submitted evidence that the line is currently at capacity.

To allow substandard service is not in the public interest. SSVEC's management believes that the Sonoita Reliability Project is required for it to provide safe and reliable service to the Sonoita area. Ultimately, the Cooperative is responsible for the quality of service for all of its members, and must make informed decisions on how to meet its obligation. The information presented in the course of this proceeding supports the Cooperative's position. The Cooperative has explored alternative configurations for the project and has selected the project as presented as the best balance between cost and impact on the community. Staff testified that the Project would improve reliability in the area.

The Commission understands the concerns and goals of some in the local community who want more investment in renewable generation and to mitigate the impact of the project on the environment and on their views. The Cooperative too has expressed the desire to invest in local

[134] Tr. at 302-303.
[135] Tr. at 93.
[136] A.R.S. §40-360 et al.

July 13, 2009 Meeting Minutes
SSVEC's Engineering Staff
Sonoita Cross-Roads Forum's Renewable Energy Committee
10:00 AM

PRESENT:

Renewable Energy Committee:	**SSVEC:**
Bob Barnhill	Jack Blair
Rachel Burand	Bobbie Burnal
CD Butsch	Ricardo Garcia
Sue Downing	Ron Orozco
Gail Getzwiller	Vic Plumb
Steve Getzwiller	Pete Swiatek
Linda Kennedy	Deborah White
Marshall Magruder	**TEP:**
Robbie Richards	Ron Belvel
Carolyn Shafer	Bill Barnitzel

I. INTRO:

a. Jack Blair reviewed the last meeting and PowerPoint presentation, Ron Orozco outlined the format of the meeting, and Carolyn Shafer gave the opening remarks.

II. POWERPOINT PRESENTATION:

a. Marshall Magruder facilitated the presentation and narrated each slide. Several comments and questions were raised throughout:

i. SLIDE 5:

1. Ron Belvel mentioned that there would be a problem servicing a backup on the existing TEP 46 kV line. [1]
2. Pete Swiatek made a correction: SSVEC operates a 25 kV line, not a 23 kV line. He also stated that 2 of the 3 proposed location points will not work, and there would be problems with Delta compatibility which would be very expensive to fix. [2]

ii. SLIDE 12:

1. Robbie Richards introduced Copernicus Energy and his background and experience in the renewable energy sector. He has executed 2 mW of renewable energy contracts in SSVEC territory and has 100 mW of signed agreements. There are roughly 40 kW in Patagonia and 1 mW in Sonoita of ground and rooftop pV solar only on residences and small businesses.
2. CD Butsch asked the SSVEC staff for clarification of the battery backup policy. Jack Blair responded by saying that battery backups were inefficient and found to be using SSVEC electricity. [3]

3. CD also asked the SSVEC staff whether there were government requirements to have X (#) of mW on "standby" per X (3) of mW of solar. This was answered after the PowerPoint presentation, and yes these requirements are true.

iii. SLIDE 14:

1. Ron Belvel stated that the N-1 standards are not appropriate to apply to the 69 kV line. [4]
2. CD asked how many times the TEP line is used to feed Fort Huachuca and no one was able to answer this question. [5]

iv. SLIDE 15:

1. Ron Belvel did not agree with the "Yes, Yes, Yes" portion of the slide. It was agreed by several others to change "Yes" to "Yes, there is potential there." [6]

v. SLIDE 21:

1. CD stated that "$25/foot" is a high estimate. He completed a $9/foot job two years ago from Mustang Corner to Sonoita. The proposal uses the $25/foot estimate, yet still shows millions in savings. He also addressed SSVEC's concerns of worker safety and said that workers have sufficient safety gear and are trained for dangerous conditions.
2. Ron Belvel mentioned that a 345 to 45 kV transformer at TEP's South substation would require building a new bay, which would cost between $7 and $10 million.

b. Marshall concluded the PowerPoint presentation, highlighting the request for SSVEC to work together with our committee and for a feasibility study (conducted by a 3rd party) to take place.

III. DISCUSSION:

a. After lunch, the following comments and questions were discussed:

i. Ron Orozco wanted the RE committee to clarify what exactly our proposal was. With use of the whiteboard, Marshall explained the two new switches, connection between UNS Electric and Patagonia from the south and SSVEC and Patagonia from the north, and the concept that if power is lost above, the bottom switch will open to send power to Patagonia.

ii. Ron Orozco asked about the capacity of the line coming in from UNS Electric and whether it would serve Patagonia part-time or full-time. This UNS Electric connection could be for either, but the details have to be agreed upon by both companies to ensure adequate power is available.

iii. Ron Orozco asked if the committee was proposing dispatchable power, and Robbie clarified that the projects are small (1-2 mW). The generators are planned to be dispatchable, for use when there is no sunlight. There are also BioGen possibilities for the Sonoita county dump site, and other storage devices expected in the next few years.

iv. A question was raised as to whether rooftop installations will have dispatchable power. They cannot be described as dispatchable or firm power. Purchase Power Agreements with SSVEC are required for firm, dispatchable power.

v. Linda Kennedy clarified that this is one alternative, not a proposal—the proposal is to do a feasibility study.

vi. Ron Orozco asked the RE committee to state which of the many options we are requesting they study—what is the best scenario? Marshall responded by saying the substation on the 46 kV line is the best alternative. A 3-ring breaker switch was discussed to automatically switch from SSVEC to TEP for power during an outage. Ron Belvel said that this would be expensive. [7]

vii. The question was raised as to whether there is a natural gas pipeline in Sonoita, and someone answered with "No." [8]

viii. It was mentioned again that SSVEC needs to know what to study if they are to do a feasibility study. Ron Orozco mentioned that perhaps a System Impact Study would work? A feasibility study would help if the project is not fully scoped, but it is necessary to have information about the generator to model it in a study.

ix. Linda and Gail both mentioned in between questions that citizens are trying to find the money to do renewable energy, and the culture in the community is that of independence. These people are more aware of our impact on the environment, and we'll be seeing smaller renewable energy systems go up in the area. However, it is expensive and difficult for citizens to know how to go about switching to renewables. Ron Orozco highlighted that SSVEC's SunWatts program offers $4/watt—is that not enough? Linda replied by saying that is not enough for most people, and also people don't know where to go to apply. [9]

x. Carolyn mentioned that it is no good to switch to renewable energy at the same capacity we have—it is necessary to make conservation habits. [10]

xi. Ron Orozco asked about Robbie's work/plan, and was most interested in the 2 mW in Sonoita. Vic Plumb asked if Robbie had a license, and Robbie repeated his background and experience once again.

xii. The topic of the necessary 3rd party outsider to do the study was brought up. Gail mentioned one of the reasons for this was because it has taken over a year for SSVEC to agree to meet with the RE committee.

xiii. Outages from Unisource were mentioned. Ron Orozco asked if they have an outage, who will serve it? Marshall replied that if Unisource doesn't have power, it will come from SSVEC—we need to do the power studies to see if it could be done. Ron Belvel mentioned that it would be possible to be done at Unisource.

xiv. CD and Ron Orozco formulated the 4 parts of the proposal:

1. 46 kV Tap
2. pV/renewable energies and Gensets
3. Reconductor/Upgrade of V7 Feeder
4. UNSE tie

xv. Slide 9: Ron Orozco mentioned that the data from the 12 months (Jan '08-Jan '09, missing November) are correct, but the time period is unusually small. Gail responded by saying we've asked for more data, but could not obtain it. Sue Downing also mentioned that data from 5-7 years previous is not going to work in the economy now. As cost rises, conservation does also. As for the chosen areas, Patagonia/Sonoita is one of the worst 5 in terms of reliability either way.

xvi. Ron Belvel stated that he will able to provide the number of times the 46 kV line has been used as backup (in response to a question raised by Gail). [11]

xvii. Deborah White gave a quick outline of the discussion and outlined three topics:

1. Backup to alternative plan
2. Load serving (pV + genset + UNS + tie)
3. Dispatchable vs. Nondispatchable

xviii. Vic stated that the transmission line is inevitable, and wanted clarification on whether the feasibility study is to postpone this line or do away with it completely. Marshall stated that we are looking at low growth, but Ron Orozco mentioned that SSVEC has an obligation to serve regardless.

xix. Carolyn asked if the substation was low growth. Ron Orozco answered yes, not in Mustang Corners, but all in the Patagonia/Sonoita area. Marshall asked that those living near Mustang Corners be put on a different feeder to relieve demand on the V7 Feeder to more distant customers.

xx. Gail highlighted the fact that our community is looking at coal-distributed energy as not the best solution in the future. We are very conscious of the way things are changing and we want to go more toward renewable energy (we have a lot of sun, etc.), and we want to suspend the line in perpetuity.

xxi. Ron Orozco stated that the renewable energy issue is understood, but it does not address the capacity issue. He also mentioned that SSVEC is applying for a solar grant in Sonoita. [12]

xxii. Gail said to Ron Orozco that SSVEC has applied for a grant for a pV array at the proposed substation. Ron and Deborah replied saying "No," they are in the process of applying for a grant. Ron stated that this meeting was for SSVEC to ask questions and not answer them.

xxiii. Linda raised the question of whether the 69 kV line will be radial, and why it will be more reliable. Pete answered by saying it is: covered by wire, spaced far apart, there are less occurrence of lightning strikes; it is off the road so there will be fewer auto accidents, higher voltage transmission lines are more reliable, and it is a sub-transmission line because it is below 100 kV, but still is a radial line.

xxiv. Gail questioned SSVEC as to whether there would be a way to work with SSVEC to go to the board meeting next Wednesday to recommend the board to do the feasibility study. Is there any chance of a possibility of a different solution than the 69 kV line?

IV. CONCLUSION:

a. Carolyn gave concluding remarks: We stand at a significant turning point in the world and how we provide electricity. We are a cooperative and we're small in terms of number of meters and square footage. We are a borderland community (one with homeland security issues), and therefore attractive to federal funding. We reside in a state where solar power is recognized as able to provide the electricity needs of the entire country, and we ask you to think outside the box. SSVEC "has a responsibility to evaluate project needs, alternatives, and designs acceptable to all cooperative members." This Sonoita-based issue has grown to something much larger of interest to an increasing number of coop members. There are fiscally responsible reasons to suggest to the BOD to conduct a feasibility study to see how this coop meets its energy needs.

b. Ron Orozco stated that the proposal is understood as: reduce coal, and do anything to stop the 69 kV from coming. He sees two different issues, however. If the mission is to reduce coal, why not just stop the line and do renewables?

c. Gail and Marshall commented on the ground swell of renewable energy in the area, working with gensets and reconductoring of the present line, and the need to work together.
d. Carolyn also replied to Ron by mentioning the financial aspect and how we've presented alternatives that link them to almost $9 million in potential savings.
e. Jack concluded: SSVEC has looked at the proposed ideas, and will go back and digest all of this and discuss it at our next senior staff meeting. SSVEC will give recommendations, and the next staff meeting is the day before the next board meeting—this will be on the agenda.
f. Bob Barnhill thanked SSVEC for listening, restated the idea to save money, and asked SSVEC to take a very serious look at what is becoming available in energy today and come up with ideas, and also to fund the feasibility study to assure SSVEC has looked at all possibilities.

MEETING ADJOURNED APPROX. 1:45 PM.

V. FOOTNOTES (POST-MEETING):

1. (Section **II.a.i.1.**) Marshall notes that due to distance routine maintenance as scheduled, only during a failure will travel time be excessive, which should be very infrequent.
2. (Section **II.a.i.2.**) Marshall has made this correction in all slides. He also notes that Delta-Wye grounding transformations are common when different systems interconnect.
3. (Section **II.a.ii.2.**) Marshall notes that these problems with battery backups only occur when used improperly.
4. (Section **II.a.iii.1.**) Marshall has made the change to this slide.
5. (Section **II.a.iii.2.**) We still need this answer.
6. (Section **II.a.iv.1.**) Marshall has made the change to this slide.
7. (Section **III.a.vi.**) Marshall notes that for the Tucson-Nogales distance, a 3-ring breaker switch at 115 kV cost $2.1 million, so he would estimate $800,000 to $1.2 million for this project since the 46 kV line is about 1/3 the voltage.
8. (Section **III.a.vii.**) Marshall notes that there is an El Paso Natural Gas transmission line that runs within a mile or so of SR-82 from I-10 to just north of Nogales, passing west of the Cross-Roads. UNS Gas is a distribution natural gas company for all of Santa Cruz County, thus UNS Gas would purchase from EPNG. Gas substations (not very large, but away from populated areas) may be required to tap into this line.
9. (Section **III.a.ix.**) Marshall would like to propose that SSVEC send a SunWatts person to give a talk in Sonoita and in Patagonia.
10. (Section **III.a.x.**) Marshall would like to ask whether SSVEC can also cover their demand side in management programs.
11. (Section **III.a.xvi.**) We still need this information from Ron Belvel.
12. (Section **III.a.xxi.**) Marshall notes that the generators can guarantee solving capacity issues and eventually will be replaced by renewable energy storage systems to meet dispatchable, firm power needs.

V-7 FEEDER ANALYSIS AND RECOMMENDATIONS

Notes for
Information Exchange Discussions with the

Sulphur Springs Valley Electric Cooperative's Engineering Staff

And the Sonoita/Patagonia/Elgin Team
Represented by the

Sonoita Cross-Roads Forum's Renewable Energy Committee

Bob Barnhill (President)
Gail and Steve Getzwiller, Linda Kennedy, Sue Downing, Jeanne Horsmann
Renewable Energy Committee, Sonoita Cross-Roads Forum,
a Section 501(c)3 IRS tax exempt organization

with

Marshall Magruder, Santa Cruz County Energy Commission, 2001-2008, consultant

Robbie Richards, Copernicus Energy

Carolyn Shafer and CD Butsch, Former Powerline Contractors, current S.E. Santa Cruz Local Sustainability facilitator

Sue Downing, Concerned Citizen, Elgin Arizona

also attending, Ron Belvel, Tucson Electric Power (TEP) and UNS Electric, Inc.

Held at the SSVEC Office, Sierra Vista, AZ
13 July 2009

These Notes provide an overview of the present status, analysis, and recommendations to the SSVEC Engineering Staff.

Team Members include
Marshall Magruder
- BS Naval Academy; MS in Physical Oceanography, Naval PG School; MSSM, USC
- Retired Naval Officer (25 years) and Hughes Aircraft/Raytheon (17 years),
- Consultant recently with ISIS, Sierra Vista (Virtual Proving Ground, USAF IW Aggressor Squadron SBIR&D), Border Patrol SBI (Virtual Fence), USN/RN Aircraft Carriers, etc.

Bob Barnhill
- President of the Sonoita Crossroads Community Forum

Sonoita Crossroads Community Forum Renewable Energy Committee:
- Gail and Steve Getzwiller
- Linda Kennedy PhD, Director, Audubon Research Ranch with Rachel Burand (intern)
- Jeanne and Rob Horsmann (unable to attend)

Copernicus Energy, LLC:
- Robby Richards, owner

E. Santa Cruz Local Sustainability
- Carolyn Shafer, Facilitator

CD Butsch, former power line contractor, Journeyman Lineman, Master Electrician

Sue Downing, Concerned Citizen Elgin Arizona

Also Attending:
Tucson Electric Power (TEP) and UNS Electric, Inc.:
- Ron Belvel, Transmission and Distribution Systems Manager
- Bill Barmitzel, Transmission and Distribution Systems Supervisor

HOW CAN WE KNOW WHAT'S BEST?

Options to be evaluated

1. 69 kV line with 69 kV Substation (as proposed) (connectivity, capacity, cost)
2. One 46 kV tap for continuity (emergency capacity, cost)
3. One to three 1 to 3 MW RE system projects, with alternative backup (sunless hours) (connectivity, capacity, cost)
4. Compare best mix of Options #2 plus #3 versus Option #1

A Feasibility analysis can provide Best Answers for all

1. To objectively evaluate all options including renewable energy and
2. To make quantitative, best value decision recommendations to this board
3. Limit to 60 days, to not delay 69 kV plan, if appropriate
4. To use an **independent evaluator (organization)** to consider all sides
5. To use team **collaboration** and open study to community participants
6. To use web-based development and collaboration processes
7. To deliver in four evolving reports covering (1) technical, (2) cost schedules information, (3) Public Relations, and (4) Short ~20-page Feasibility Study with an attached draft RFP for the recommended Option, if not the 69 kV line
8. Study Cost est. $70k or less, maybe <$50k

What are the options:

- **Construct a 69 kV that does not meet reliability criteria or**
- **Connect with 2 TEP/UNSE locations for backup (second line), use smaller Sonoita substation with feeders, with one or three renewable energy systems (with access to gas-powered electric generators), with many local private RE systems**

Resolve by conducting a FEASIBILITY STUDY

Conduct a Feasibility Analysis (Trade-Off Study) to provide the answer. Should be fast, so as not to delay 69 kV if that's the result (but really urgency isn't an issue)

See FEDERAL REGISTER announcement (29 May) for "Inviting Applications for Renewable Energy Systems and Energy Efficiency Improvements Grants and Guaranteed Loans and Renewable Energy **FEASIBILITY STUDIES GRANTS** Under the Rural Energy for American Program [Act of 2008, in Farm Bill] (handout)

AND

See Arizona Department of Commerce Energy Office, "American Recovery and Reinvestment Act of **2009 State Energy Program**" of 12 May 2009. (handout)
BOTH can provide funds to determine the best V-7 Feeder Option

WHICH OPTION IS LEAST EXPENSIVE?

69 kV solution has an estimated cost is $ 13.5 M including $3 M *substation*

1. Does not provide reasonable continuity of service
2. Does not improve reliability

Proposed Renewable Energy approach

1. Saves SSVEC capital funds with private investment
2. Can qualify for various Stimulus funding to save SSVEC capital $$
3. Maybe less expensive to meet V-7 Feeder growth needs
4. May have significantly lower life-cycle ratepayer costs

Additional Benefits of Renewable Energy

1. Benefits of distributed generation (voltage stability, less line loss, etc)
2. Helps meet future ACC Renewable Energy Standard goals for SSVEC
3. Provides reasonable continuity of service with improved reliability

Estimated costs for components for an alternative to the 69 kV line.

Substation	
One 25 kV relay substation in Sonoita, present "downtown" location:	$2,250,000
Reliability Loop Equipment and lines	$450,000
Peaker Plant:	
two 1.1 MW @375,000 =-2.2 MW Natural Generators:	$750,000
46 kV backup Interconnection:	
One 46:25 kV transformer and substation (TEP ownership):	$200,000 to $300,000
One three ring breaker switch for 46 kV backup (@ TEP substation)	$800,000 to 1.2 M
UNSE Interconnection:	
SSVEC:UNSE Transformer and associated equipment	$100,000
One mile of distribution lines (Patagonia – UNSE)	$100,000
Total cost	**from $4,650,000 to $5,150,000 ***

* Cost ranges is due to variable Substation costs for distribution loops, number and size of Generator sets, and three-ring breaker switch

POSSIBLE COSTS FOR RELIABILITY OPTIONS

Substation	
One 25 kV relay substation in Sonoita, "downtown" location:	$2,250,000
Reliability Loop Equipment and lines	$450,000
Peaker Plant:	
two 1.1 MW @375,000 Natural Generators (2.2 MW):	$750,000
46 kV backup Interconnection:	
46:25 kV transformer, substation (TEP owns):	$250,000
One three ring breaker switch for 46 kV backup TEP	$800,000 to $1.2 M
UNSE Interconnection:	
SSVEC:UNSE Transformer and associated equipment	$100,000
One mile of distribution lines (Patagonia – UNSE)	$100,000

Total $4,700,000 to $5,100,000 Plus solar PV (minus stimulus = ??)

Here are some estimated costs for components being discussed, quotes from various sources

46 to 25 kV transformer @ $300kv = includes remote switching	$300k (at Sonoita TEP-SSVEC interconnections)
46 kV 3-ring breaker switch	$800,000 - $1,200,000 (@TEP substation)
25 to 13.2 kV transformer @ $100k includes remote switching	$100k (at Patagonia-SRV interconnection)
25 kV line to connect @$100k / mile	$100k (between Patagonia and SRV interconnection)
UNSE/TEP estimate	**$1,300,000 to $1,700,000**
Sonoita substation ($1.5M + $50 breakers + $500k other)	$2,250k
For reliability loops **from substation**	**$ 450k**
SSVEC estimate	**$2,700k**
Generation Sets (1.1 MW @350k x 2	$ 700k (for 2.2 MW of backup for over 7 MW at peak)
TBD (PPA or SSVEC)	**$ 700k**
Total	**$4,650,000**

PLUS Solar MINUS Stimulus = $$

COSTS FOR SYSTEM RELIABILITY IS NOT SO BAD

Cost Summary to Reasonably Meet Connectivity & Capacity Needs

- TWO Generation Sets (gas, biogas, other) (2.2 MW on-call and dispatchable)
- Emergency Backup (TEP) with 3-ring breaker
- ONE 25kV Substation with Reliability Loops
- Plus On-call Tie to UNSE

$4,700,000

summary slide

NOTE:

1. **The generators are dispatchable and will be designed for deliver electricity as FIRM Delivery, peak and non-peak)**
2. **To be used when demand gets close to 7 MW, such as spinning reserves at 6.8MW demand.**

CONNECTIVITY AND CAPACITY (C&C) PLUS RENEWABLE ENERGY

C&C $4,700,000 + 1MW Solar $5,500,000* = $10,200,000 total cost

C&C 4,700,000 + 2x1 MW Wind $2,000,000* = $6,700,000 total cost

C&C $4,700,000 + 2x1 MW BioMass $200,000** = $4,900,000 total cost

Total savings for SSVEC after adding a Renewable Energy Component

Savings could be from $3,300,000 to $8,600,000

(*)(**) - estimates

This does NOT reflect any stimulus funds or grants to reduce or eliminate the cost of Renewable Energy Systems

Conclusion: After obtaining information from another presenter, Environmental Technology Assistance Co. LLC, (ETAC) who is investigating putting in renewable generating station in the Willcox Area. And information from the SSVEC Board who reported on a 1MW BioMass Generator that was operating in their service area that only cost $98,000** to build.

Have now added the costs of installing Renewable generating stations to the CONNECTIVITY and CAPACITY (C&C) costs listed above.

Several Possibilities all saving the SSVEC millions of dollars *(from $4.5 mil to $9,804,000):*

C&C $4,700,000 + 1MW Solar $5,500,000* = $10,200,000 (with 1 MW RE)

C&C $4,700,000 + 2 x 1 MW Wind $2,000,000* = $6,700,000 (with 2 MW RE)

C&C $4,700,000 + 2 x 1 MW BioMass $200,000** = $4,900,000 (with 2 MW RE)

* ETAC data

** Data presented by Jack Blair at the SSVEC 27 May BOD meeting

NO Stimulus funds are included

UPGRADE 25KV FEEDER TO SONOITA (BARE BONES)

Option: Re-conductor existing line with 336 conductors:
Purpose: To increase capacity of existing line from 7 MW to 20 MW

1. Upgrade can take place when SSVEC upgrades the existing poles:
   Cost: 5280 ft x 19miles = 100,320 ft x $25 / foot = **$ 2,508,000**

Saving compared to 69 kV (13.5-2.508) = $ 9,992,000

Add below to increase reliability
2. One 46:25kV transformer for TEP Emergency Backup = $ 600,000
3. One 3-way ring breaker switch for automated backup = $ 800,000 - $1.2M
4. Sonoita Substation plus 4 Reliability Loops = $ 2,700,000
5. SSVEC-UNSE tie including lines and equipment = $ 200,000

Totals (#1-#5) $6,800,000 to $7,200,000 (#1 includes labor, hot job)

Another plan the "Feasibility Study" could evaluate, would be bringing a 2nd line into Sonoita on the existing line to double the capacity on that line and establish a loop using the existing line.

This gives us

(1) a 7 MW line from the Sonoita substation to serve existing customers between Sonoita and Mustang Corners and

(2) A 14 MW (new line) from Mustang Corners to Sonoita as the main V-7 feeder to the new substation.

(3) Adding in the TEP 46 kV interconnections, UNSE interconnection and line, then

(4) This plan would reduce the need for a large transformer substation in Sonoita for the 69kV line to be a 25 kV hub for reliability loops as SSVEC may want a smaller substation to introduce loops into this plan.

This gives backups for lines, poles and transformers but not remote generation to meet the ACC Continuity of Service reliability criteria. Adding two 1.1 MW would meet the criteria for an additional $700,000 for (2.2 MW) with a 9.2 MW capacity.

Only pole conductor and replacements as a routine upgrade process should meet the NEPA Exclusion Category to replace and upgrade distribution lines on BLM lands, if required at all.

If there are problems with the NCA, we feel local support, including by former Congressman Kolbe should assist in keeping this in the Exclusion Category. We can try to arrange, if that helps.

OVERVIEW OF RFP FOR FEASIBILITY ANALYSIS

We prepared a draft RFP for SSVEC's consideration as a way to make an objective decision.

1) Collaborative: Project working papers are shared with SSVEC and Cooperators
2) Interactive: Online reports allow for SSVEC and Cooperator input
3) Four reports: Addressing multiple levels of concern; (a) technical, (b) cost and schedule, (c) Public Relations, and (d) Recommended Action (Summary Study)
4) Frequently base-lined: Data collection for all prospective alternatives
5) Action items: Clear action items for construction, funding, and implementation

TEAMWORK GETS BEST RESULTS!!

Please see our proposed RFP that is a TEAMWORK approach to putting together the BEST OPTION for the V-7 Feeder cooperators.

All of us want to work with the company to ensure we understand each other. That the BEST is best for all. The details in the proposed RFP cover, we believe, all key issues that should be summarized in a 20 or so page FEASIBILITY STUDY that will give the BOD with confidence that funds are being wisely spent in the best interest of SSVEC's customers.

Our initial funding approach, with discussions with TEP and others all recommend that we show 'feasibility' as a real option to significantly benefit both SSVEC and UNS Electric customers.

When two companies want to work together, completing "cross boundary agreements" become easy, teamwork breeds teamwork. Let's get started.

Our three Communities are motivated and eager to participate doing their part with home and business-oriented solar PV systems. Companies are eager to provide Renewable Energy on their properties, landowners are agreeable for "plant" systems (1-3 MW solar arrays), community citizens want this on their land, and with leadership and assistance from SSVEC, we see a "bright" future for our feeder area that may have been burdensome in a former years.

SSVEC could create the model for many other "end of the line" rural systems that face growing capacity issues. Our issues aren't unique but solving with modern technologies can benefit so many others in the same situation.

RECOMMENDATIONS

Today, we recommend that SSVEC Staff

1. Seriously consider **all** these Options
2. **Work with our Committee** and collaborate details necessary to better understand the renewable option(s) and how to foresee and overcome local issues.
3. Provide an RFP for a FEASIBILITY STUDY by a competent third party for the July SSVEC BOD meeting for review and approval decision. Include at least six independent, qualified Arizona organizations to receive the RFP with a 14-day turnaround, 5-day evaluation period for **award NLT 20 August with completion NLT 20 October.**
4. Vigorously pursue the USDA and AZ Energy Office Stimulus programs, including funding for a Feasibility Study. We can help!
5. Understand the urgency to complete and present the FEASIBILITY STUDY to the BOD prior to starting any construction of the proposed 69 kV line.
6. Provide periodic Feasibility Study Status Reports to BOD.

Our DRAFT FEASIBILITY RFP provides a consensus of our team's work to provide SSVEC with a rather comprehensive outline that should lead best practices in preparation of a joint Report using our Committee, consultants, volunteers and a selected, third party, independent organization to work with our TEAM to review technical information, local and regional electrical information, environment, economic and energy demands necessary.

We want to work closely with and not apart or opposing SSVEC in this process. We feel the final results will benefit all of us in many ways it is hard to imagine at this time.

Please give this approach your most serious attention.

Our communities need Continuity of Service reliability, need backups and fully supports use of renewable energy to solve our continuity and capacity needs, instead of a 1982 solution.

We all Thank you!!!

DRAFT

Request for Proposal
For Sulphur Springs Valley Electric Cooperative
Review and Acceptance

{a working document}

Project Summary

The Sonoita/ Elgin Communities have significant concerns regarding a proposed 69kV transmission line proposed by Sulphur Springs Valley Electric Cooperative, Inc. (SSVEC). The concerns can be summaries in four key areas:

1. Visual pollution (aesthetics) of the beautiful northeast portion of Santa Cruz county;
2. The ecological and research impacts of the installation and maintenance of the proposed line;
3. The lack of renewable energy utilization – furthering dependence on non-renewable energy generation; and
4. Rising Energy Costs; Would employing Renewable Energy now save Cooperator Dollars in the future?

The purpose of a feasibility study would be to examine renewable energy alternatives to the installation of the proposed line, and to preliminarily quantify the cost of such an alternative.

Completion of such a study would satisfy SSVEC Cooperator concerns about the proposed line and quantify possible renewable distributed energy alternatives, by a qualified company. Improving the relationship and understanding of the Cooperative and its members, as unresolved questions are answered. The outcome would promote a mutually beneficial working relationship between cooperators and company.

Feasibility Study Overview

The feasibility study will determine a recommended best course of action for the proposed project. Specifically, the study would address two needs for customers on the SSVEC V-7 feeder line:

1. Providing increased capacity; and
2. Improving continuity (reducing power outages, or the risk thereof).

While special attention will be given to finding reasonable renewable energy solutions, the proposed 69kV transmission line will be evaluated, and compared and contrasted to other considered options. Cooperation with SSVEC engineers and staff will be critical to the information sharing and evaluation of all alternatives.

The study will include (but not be limited to); site details, resource requirements and availability (water), area guidelines/regulations (fed/state/county), technical options appraisal, technical suitability, demonstration value, capital cost range, energy output, CO2 savings, water usage (if any) or savings, practical considerations, system sizing requirements and a project commissioning timeline.

Particular attention will be paid to identification of potential funding options/sources, financing options/sources, and federal/state incentives. Consideration will be given to utility, SCCF, Patagonia, and third party system ownership.

Due to the sensitive nature of this project there should be an emphasis and/or focus on environmental, social and planning issues that may be associated with each option. Methods and assumptions should be detailed throughout the document. Verifying the availability of a renewable energy source at a specific site (e.g., wind studies, seasonal flow rates of a watercourse, landfill gas production rates and expected life, etc.) will be included.

Deliverables

The following Reports with accompanying Presentations are to be delivered in contractor format, including, as a minimum, information from the below deliverables with conceptual studies, feasibility and sensitivity analyses, power flow analysis, public relations and contact information, cost information with a financial and business plan, and Action Items and Status.

The deliverables will be integrated, updated at least every Friday by noon, and available, under controlled conditions, to designated study participants on a mutual website. Development of a comprehensive presentation series, as a minimum in PowerPoint with notes, shall parallel each report. At end of each third week, each report will be completed; however, the "reports" in between are to be considered as "working papers" and may be outlines and include TBD's as placeholders. The Third Week Reports will provide completed work but may have appendices showing report plans for the next 3-week cycle.

No. 1 – The Project Plan (including trade and technical studies)
No. 2 – Media, Contact and Promotion Plan
No. 3 – Funding, Financial and Business Plan, Proposed Agreements and REPs
No. 4 – Feasibility Study Results Report and Program Schedules, Action Items and Status

I. FEASIBIBLITY IDENTIFICATION AND ANALYSIS PLAN

Scope: Upon execution of this Agreement and any extension thereof consultants engaged by the company (SSVEC), under the direction and supervision of Company's Chief Executive Officer ("CEO") or specified designee, shall devote sufficient time and effort in conducting the following:

In coordination with engineers, manufacturers, contractors and sub-contractors from design, installation, operation and warranty disciplines

1. Identify the most efficient and cost-effective types of renewable energy systems that can be successfully installed throughout the northeastern area of Santa Cruz County served by Feeder V-7.

2. Include as potential candidates for feasibility analysis photovoltaic (PV), solar thermal, concentrated solar, wind, and biomass generation systems with, as appropriate, additional "peaker" opportunities in Report No. 1.

3. Establish contact and work closely with Sulphur Springs Valley Electric Cooperative (SSVEC) staff to review level of interest in renewable energy project so participation and electricity purchase are facilitated to meet the connectivity and capacity needs in Report No. 1. Negotiate preliminary terms as indicated and appropriate in Report No. 3.

4. Establish contact and work with Tucson Electric Power Company (TEP) to ascertain level of interest in renewable energy project participation, electricity purchase, and potential interconnectivity in Report No. 1. Negotiate preliminary terms including cross-boundary agreements, as indicated and appropriate in Report No. 3.

5. Establish contact and work with UNS Electric (UNSE) to ascertain level of interest in renewable energy project participation, electricity purchase, and potential interconnectivity in Report No. 1. Negotiate preliminary terms including cross-boundary agreements, as indicated and appropriate in Report No. 3.

6. Establish contact and work including project promotion and solicit support from the Santa Cruz County Board of Supervisors, County Community Planning Department, the Sonoita Community Crossroads Forum, the Town of Patagonia and Planning Department to present a preliminary renewable plan(s) for best sites to locate small (1-3 MW) renewable energy generation sources in Report Nos. 1, 2, 3, and 4.

7. Establish contact and work including project promotion and solicit support from the Arizona Department of Commerce Energy Office, the Arizona Governor's Office, Arizona Corporation Commission Utility Division, and State Congressional Delegates. Attention must be given to identify, submit, and negotiate state or federal grants, other funding, and/or loan incentives that could impact renewable energy funding for the project in Report Nos. 2, 3, and 4.

8. Establish contact and work including project promotion and solicit support from the federal Congressional delegations, Department of Energy, Department of Agriculture and Forest Service for near-term federal stimulus package assistance in Report Nos. 2, 3, and 4.

9. Establish contact and work including project promotion and solicit support from Department of Interior including the Bureau of Land Management for inclusion in Federal stimulus package assistance and

assistance with a preliminary overview and determination of possible site locations environmental and natural resource impacts in Report Nos. 1, 2, 3 and 4,

10. Establish contact and work including project promotion and solicit support from Arizona State Land Department, Parks and Recreation Department, Fish and Game Department for assistance with possible site locations in Report Nos. 2, 3 and 4.

11. Develop a comprehensive media and promotion, preliminary and final, plans to provide extensive media coverage and positive media for SSVEC, the Project, and all entities that dedicated resources to the Project in Report Nos. 2,3, and 4.

12. Provide advocacy, promotion, and negotiation of renewable energy incentives from public utility companies, and negotiate wholesale power purchase agreements for sale of power generated from the Project in Report Nos. No. 3 and 4.

13. Make specific recommendations, based on analysis and research, as to Project sizing, location, engineering, schedule, design and cost with proposed return on investment (ROI) determination, appropriately, in Reports No. 1, 3 and 4. Recommendations will include equipment and inverter specifications, grid-tie engineering, "Sonoita reliability loops," and interconnection specifications between SSVEC and/or TEP/UNSE, and construction scheduling in Reports No. 1 and 4.

14. Incorporate recommended system and schedule in the format of an RFP ready for bidding, including objective source selection criteria in the RFP in Report No. 4.

15. Identify experienced and qualified Arizona contractors and sub-contractors as potential bidders for the recommended system for presentation of Statement of Qualifications (SOQs) in Report No. 3.

16. Prepare a comprehensive project (and phasing, if appropriate) timeline and schedule from inception through system commissioning with Feeder V-7 capacity changes over time, viewed as annual and daily demand curves.

17. Coordinate and conduct with the Town of Patagonia and SCCF community meeting(s) to secure feedback from the SSVEC cooperative's members in the service area, and other parties for comment prior to development of final project plan in Report No. 2.

18. Develop an ongoing Operations and Maintenance (O&M) plan for the recommended system in Report No. 1.

19. Assist Town of Patagonia and Sonoita Crossroads Community Forum to prepare and submit of applications for local, state, and national grants, low cost loan programs or other assistance determined feasible in Report No. 3.

20. Present funding options for construction and/or permanent financing – depending on recommenced system and subsequent financing recommendation in Report NO. 3.

21. Secure letter(s) of intent from funding providers in Report No. 3.

22. Negotiation of terms for presentation with Staff to the SSVEC Board from utility(ies) and/or power purchasers in Report No. 3.

23. Identification of necessary permits required for project in Report Nos. 1 and 4.

24. Projected Completion date: August 30, 2009.

II. POSSIBLE COMPENSATION AND PAYMENT SCHEDULE

Estimated		$75,000
At Award - startup	$25,000	
On 30 Aug 2009, after Final Reports delivered	$35,000	
Upon SSVEC Review Final Reports	$15,000	

The above are on a Not-To-Exceed-Basis. However, if Patagonia, SCCF and SSVEC request additional deliverables or changes to above deliverables and is agreed to by the company awarded the Project, they will provide a written estimate of costs – to be agreed to by all parties in writing.

All out-of-pocket expenses incurred by awarded company are in the price of this contract and will be fully the responsibility of successful bidder, including any expenses incurred for engineering, professional consultants, and travel.